


INFORMATIVE



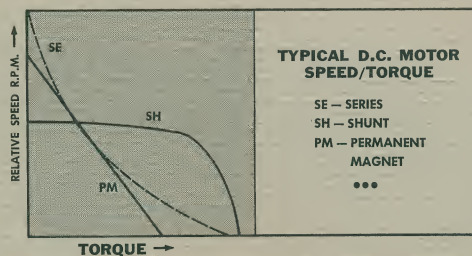
we custom design  
small, *reliable*  
special purpose  
motors



 **TRANSCO**  
**MOTOR**  
MANUFACTURING INC.



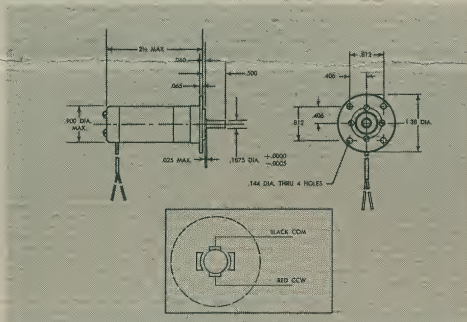
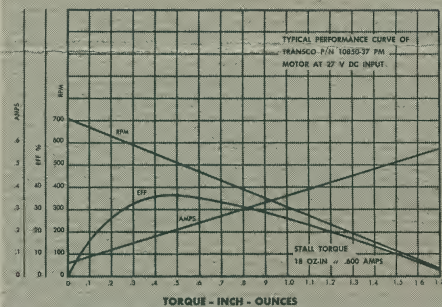
# DC MOTOR



## PERMANENT MAGNET

**SIZE 8**

Specifications shown are typical. Various windings are available for a wide range of speed and torque characteristics. D.C. motors can be supplied as series, shunt or P.M. type. Accessories include magnetic brake, overload protector, noise filter, or gearbox to meet customer requirements. Motors meet applicable MIL specifications.



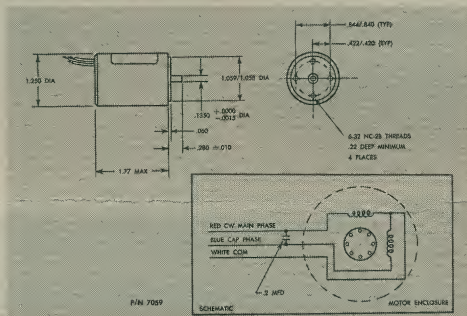
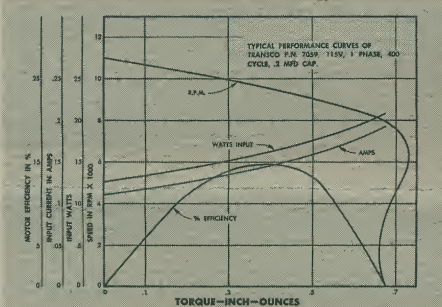
### SPECIFICATIONS

Type	Permanent Magnet
Volts	27 VDC
Amps N.R.L.	.15
R.P.M.	575
Torque N.R.L.	.3 in. oz.
Stall Torque	1.8 in. oz.
Stall Current	.65 amps. max.
Duty	Continuous
Rotation	Reversible
Amb. Temp.	-65°F. to +225°F.
Weight	3 oz.
Accessories	Gearbox
Mil Spec.	Designed to meet MIL-M-8609

## A.C. INDUCTION

**SIZE 12**

Specifications shown are typical. Various windings are available for a wide range of speed and torque characteristics. A.C. motors can be supplied as 60 or 400 cycle induction or synchronous. Accessories include magnetic brake, overload protector, noise filter, or gearbox to meet customer requirements. Motors meet applicable MIL specifications.



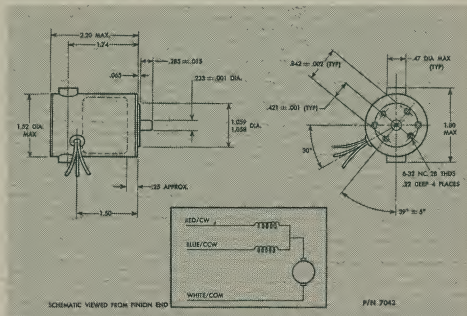
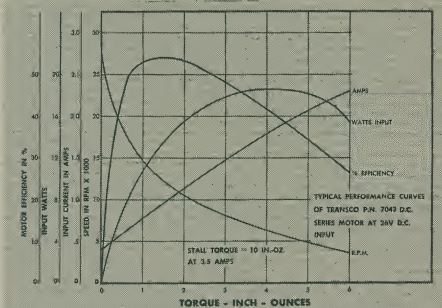
### SPECIFICATIONS

Frequency	400 Cycle 1 $\phi$
Rotation	CW
Capacitor	0.2 MFD.
Volts	115 V.A.C.
Amps	.125
R.P.M.	10,500
Torque N.R.L.	.2 in. oz.
Starting Torque	.65 in. oz.
Stall Current	0.2 Amps
Duty	Continuous
Amb. Temp.	-65°F. to +300°F.
Weight	5 oz.
Mil. Spec.	Designed to meet MIL-M-7969A

## D.C. SERIES

**SIZE 15**

Specifications shown are typical. Various windings are available for a wide range of speed and torque characteristics. D.C. motors can be supplied as series, shunt or P.M. type. Accessories include magnetic brake, overload protector, noise filter, or gearbox to meet customer requirements. Motors meet applicable MIL specifications.

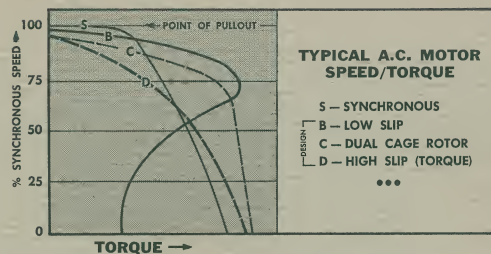


### SPECIFICATIONS

Type	Split Series
Volts	26 V.D.C.
Amps N.R.L.	1.5 Amps
R.P.M.	10,000
Torque N.R.L.	2.0 in. oz.
Stall Torque	10 in. oz.
Stall Current	3.5 Amps
Duty	70% Continuous
Rotation	Reversible
Amb. Temp.	-65°F. to +250°F.
Weight	8 oz.
Mil. Spec.	Designed to meet MIL-M-8609



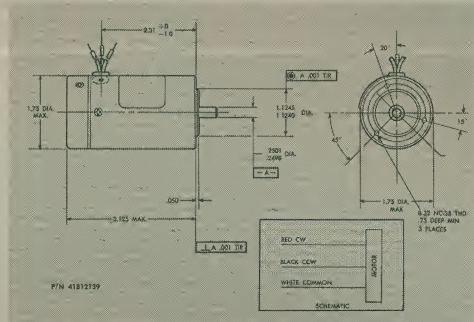
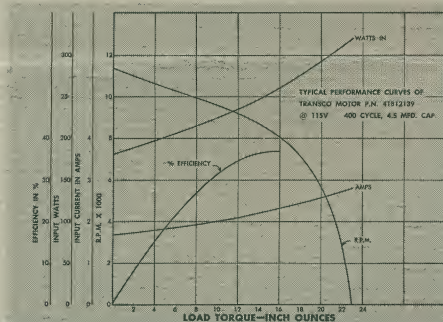
# AC MOTOR



## A.C. INDUCTION—WITH BRAKE

**SIZE 18**

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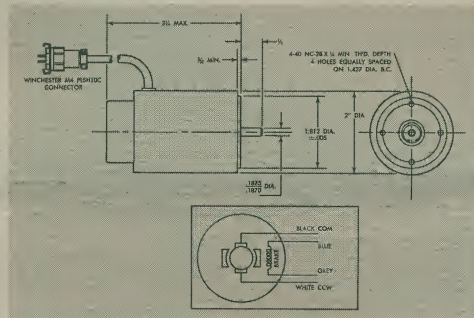
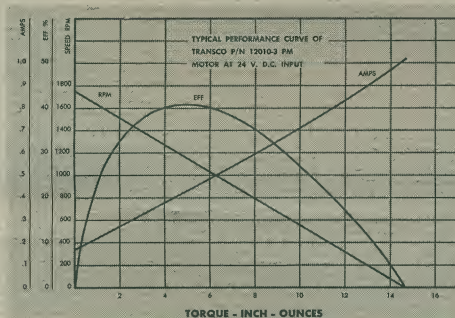
### SPECIFICATIONS

Frequency	320-480 cycles 1 $\phi$
Rotation	Reversible
Capacitor	4.5 Mfd.
Volts	115 VAC
Amps	2.2
R.P.M.	10,000
Torque N.R.L.	12 in. oz.
Starting Torque	21.5 in. oz.
Stall Current	3.3 Amps
Duty	Intermittent
Amb. Temp.	-65°F. to +160°F.
Weight	18 oz.
Mil. Spec.	Designed to meet Mil-M-7969A

## PERMANENT MAGNET

**SIZE 20**

Specifications shown are typical. Various windings are available for a wide range of speed and torque characteristics. D.C. motors can be supplied as series, shunt or P.M. type. Accessories include magnetic brake, overload protector, noise filter, or gearbox to meet customer requirements. Motors meet applicable MIL specifications.



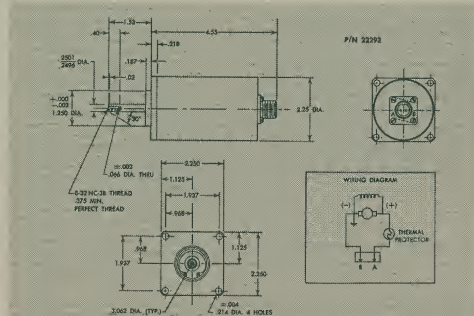
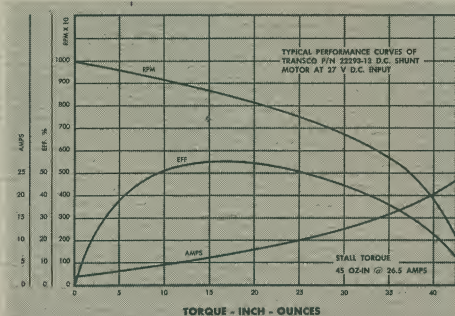
### SPECIFICATIONS

Type	Permanent Magnet
Volts	24 VDC
Amps N.R.L.	.4
R.P.M.	1250
Torque N.R.L.	4.0 in. oz.
Stall Torque	14 in. oz. min.
Stall Current	1.0 amps
Duty	Continuous
Rotation	Reversible
Amb. Temp.	-65°F. to +225°F.
Weight	20 oz.
Accessories	Magnetic brake
Mil Spec.	Designed to meet MIL-M-8609

## D.C. SHUNT

**SIZE 22**

Specifications shown are typical. Various windings are available for a wide range of speed and torque characteristics. D.C. motors can be supplied as series, shunt or P.M. type. Accessories include magnetic brake, overload protector, noise filter, or gearbox to meet customer requirements. Motors meet applicable MIL specifications.



### SPECIFICATIONS

Type	D. C. Shunt
Volts	27 VDC
Amps N.R.L.	5.0
R.P.M.	10,000
Torque N.R.L.	9.5 in. oz.
Stall Torque	45 in. oz.
Stall Current	26 amps
Duty	Continuous
Rotation	CW
Amb. Temp.	-65°F. to +160°F.
Weight	34 oz.
Accessories	Thermal overload
Mil Spec.	Designed to meet MIL-M-8609





# MOTOR SELECTION

## MOTOR SELECTION SUGGESTIONS

After selecting a power source, determine the speed and torque for your application. Many speed/torque options are available as shown on the typical curves. See the NOMOGRAPH on the back of this brochure for information to calculate the approximate frame size. The following summary will help you select the best motor type for your requirement.

### AC TYPES

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**HIGH SLIP (TORQUE MOTOR)** . . . Much higher starting torques can be obtained from high-slip motors. They can be used to great advantage in very short duty cycle applications or where minimum size and weight is a factor. Many applications using low-slip motors could obtain better results using a high-slip motor. A rough rule of thumb is to apply a high-slip motor if the average motor speed is not over 65% synchronous speed. This average speed can be obtained by dividing the total revolutions of the operating cycle by the desired operating time. These motors can also be used at continuous stall conditions or driven in a reverse mode to apply a continuous braking torque.

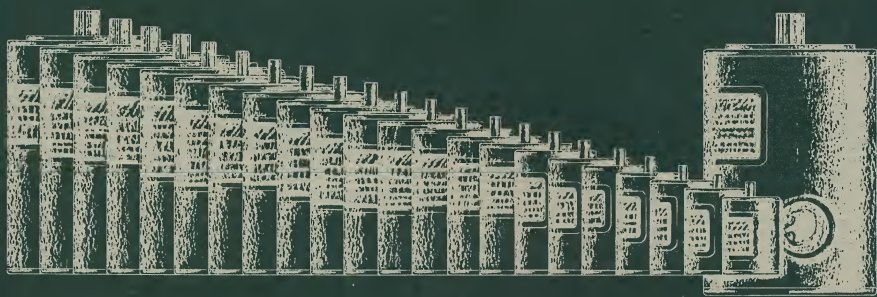
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**SHUNT** . . . Shunt motors have very stable speeds under varying torques. They are fairly stable with varying voltages. Somewhat less radio noise is encountered in a shunt motor than in a series motor. Available only from TRANSCO is a split-shunt type with three leads to make the motor easily reversible and allow reverse-forward modulation pulsing . . . also multiple lead motors, for example a four lead motor can have (1) CW series, (2) CCW shunt, (3) CW shunt. This is the industry's most flexible DC motor.

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Many motor types are not covered in this short summary, however, at TRANSCO each application is studied by engineers with wide experience in all types of motors.



**22 BASIC FRAME SIZES . . .** Transco Motor has the tooling ready-to-go on 22 type-sizes and can supply the motor to do your job. AC split phase, permanent split capacitor, hysteresis synchronous, torque, squirrel-cage . . . DC shunt wound, series wound, compound wound, split series, split shunt, permanent magnet . . . AC-DC UNIVERSAL uncompensated, compensated, governor controlled, split series.

**FACILITY & EXPERIENCE . . .** Transco Motor has extensive experience and facilities to design/develop/manufacture fractional and sub-fractional horsepower motors.

**MIL SPECIFICATIONS . . .** Your specific requirements will be reviewed by motor engineers with wide experience in all motor types. Motors can be qualified to MIL-M-8609A for DC motors, MIL-M-7969B for 400 cycle AC motors, or other applicable MIL specifications.

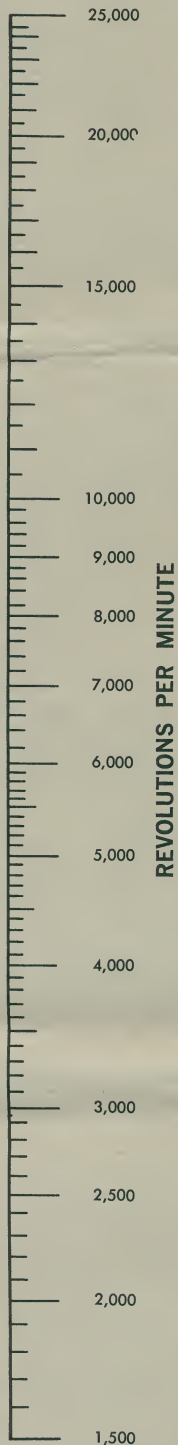
**QUALIFICATION . . .** Transco's very complete environmental test facilities include high and low temperature, shock, vibration altitude, and humidity. Qualification to MIL specifications can be accomplished at Transco except for very specialized tests.



**TRANSCO**  
**MOTOR**  
MANUFACTURING INC.



# POWER NOMOGRAPH



REVOLUTIONS PER MINUTE

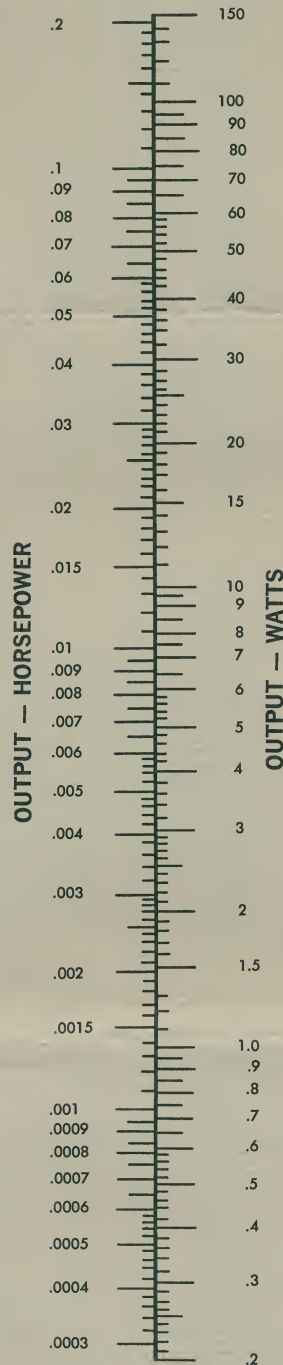
## OUTPUT FORMULA

$P = \frac{2\pi \cdot N \cdot T}{33,000}$   
 P = Horsepower Output  
 N = R.P.M.  
 T = Torque in pound-feet  
 $W = .00074 \cdot N \cdot t$   
 W = Watts Output  
 N = R.P.M.  
 t = Torque in ounce-inches

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MOTOR**

## RECOMMENDED FRAME SIZES

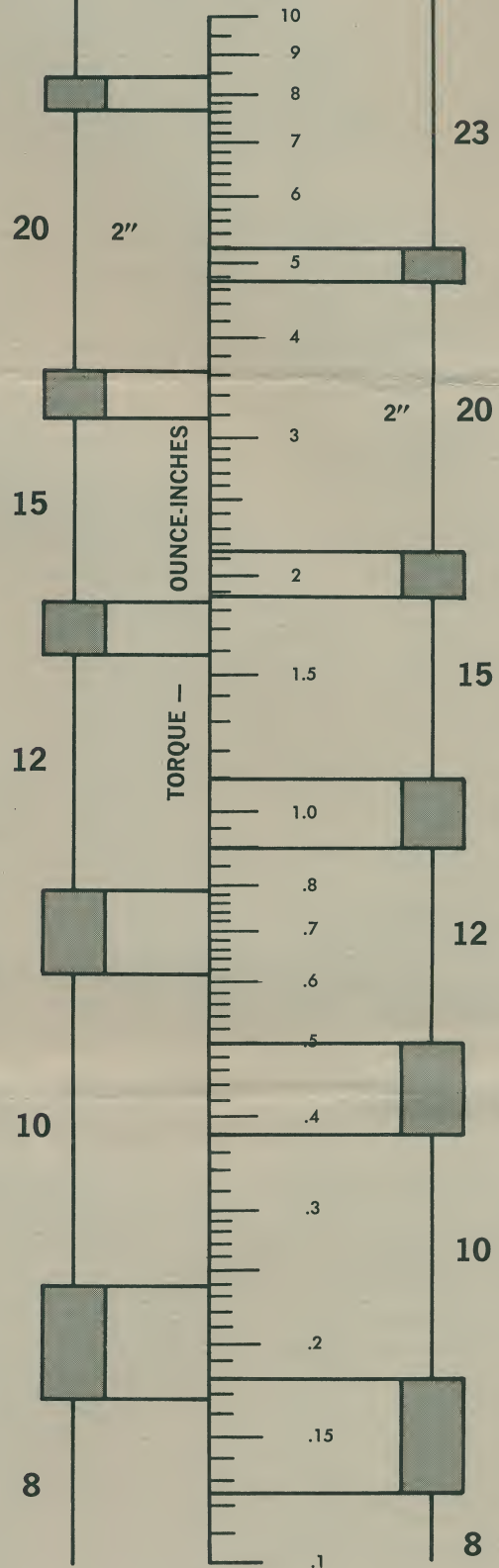
Gray area shown on nomograph indicates that either of the adjoining frames can be used, preferably the larger frame.



AC 400  
cps, 3  $\phi$

DC &  
400 cps  
AC 1 & 2  $\phi$

MOTOR FRAME  
DIAMETER IN INCHES



RECOMMENDED  
FRAME SIZES

RECOMMENDED  
FRAME SIZES





we custom design  
small, *reliable*  
special purpose  
motors



 **TRANSCO**  
**MOTOR**  
MANUFACTURING INC.



Clutch-Brake-Clutch -  
K5-72A Camera

Tape Drive - Computer

Gun Charger -  
Coin

Landing Gear -  
Mooney

Seat Actuator -  
F-5

Drive Motor -  
Camera

Power  
Transfer -  
Switch

Fuel Pump -  
C-130, C-141

Trim Tab - F-104

Hot Air Valve -  
F-100

Tape  
In Flight

Air Valve Actuator -  
F5 T38

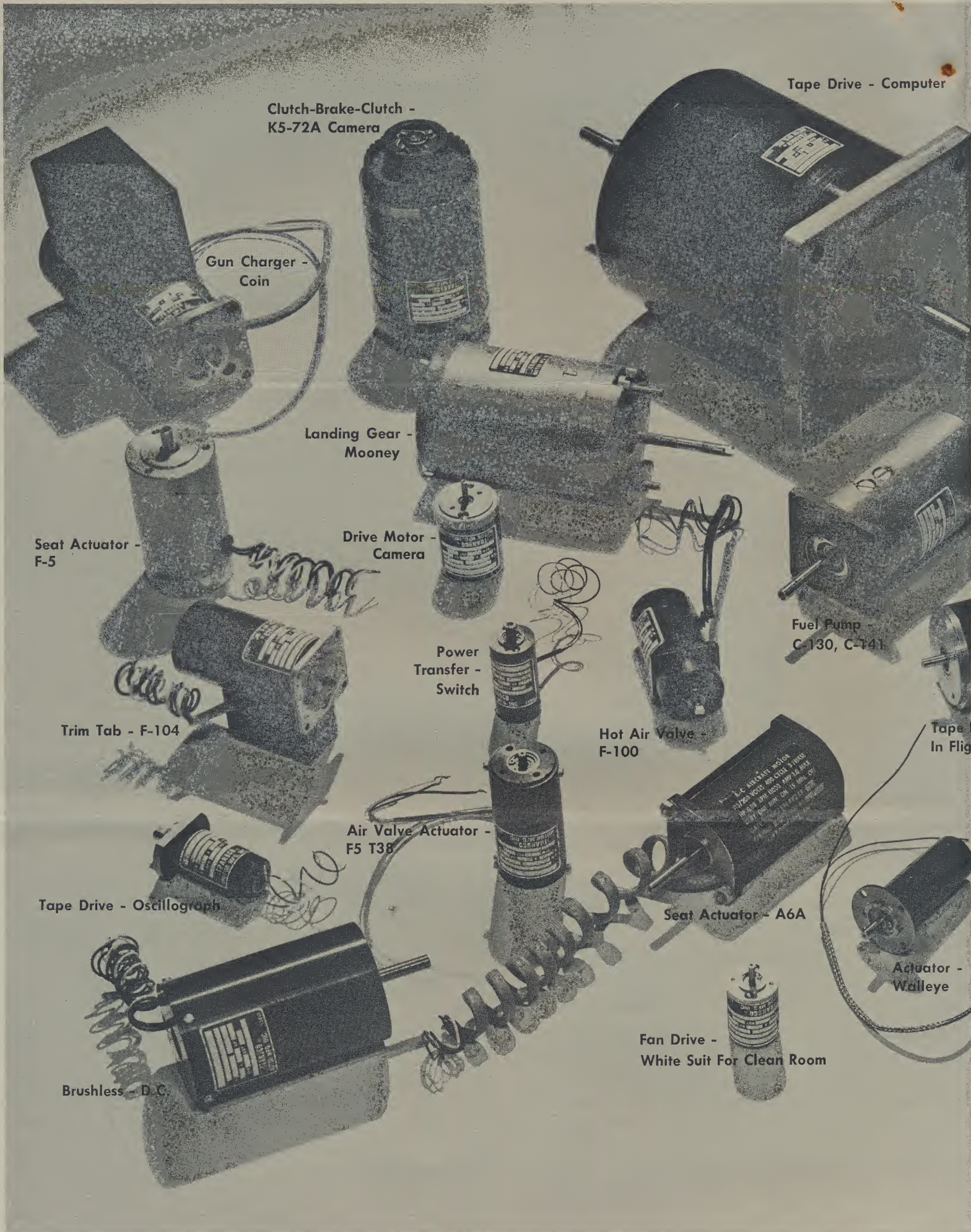
Tape Drive - Oscillograph

Seat Actuator - A6A

Actuator -  
Walleye

Brushless - D.C.

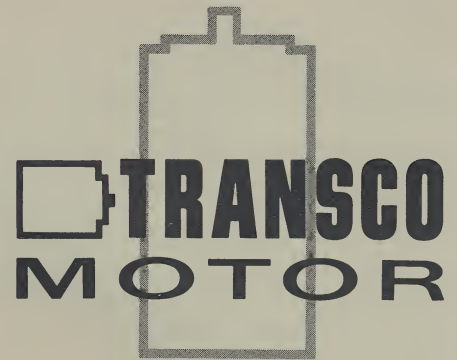
Fan Drive -  
White Suit For Clean Room





Water Pump + Filter - 707

Fuel Pump



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Transco Motor has the tooling ready-to-go on 22 type-sizes and can supply the motor to do your job. AC split phase, permanent split capacitor, hysteresis synchronous, torque, squirrel-cage . . . DC shunt wound, series wound, compound wound, split series, split shunt, permanent magnet . . . AC-DC UNIVERSAL uncompensated, compensated, governor controlled split series.

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Lobing Switch

Hot Air Valve -  
B-52, KC135, 102

Actuator - Timer

Drive -  
Entertainment

Tape Drive -  
Governed

Cook Switch

Switch Actuator -  
M60 Tank

Fuel Pump

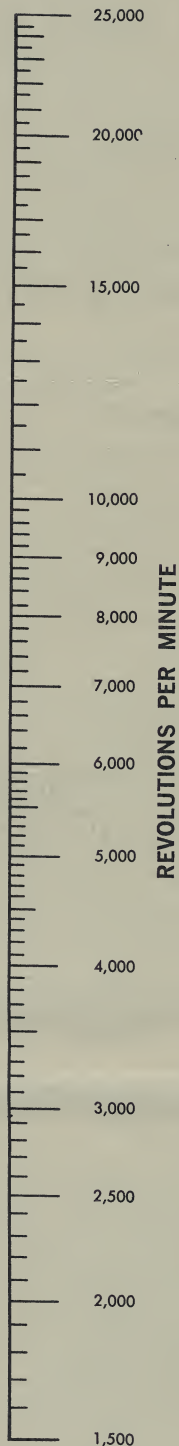


# POWER NOMOGRAPH

AC 400  
cps, 3  $\phi$

DC &  
400 cps  
AC 1 & 2  $\phi$

MOTOR FRAME  
DIAMETER IN INCHES



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$$P = \frac{2 \cdot \pi \cdot N \cdot T}{33,000}$$

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N = R.P.M.

T = Torque in  
pound-feet

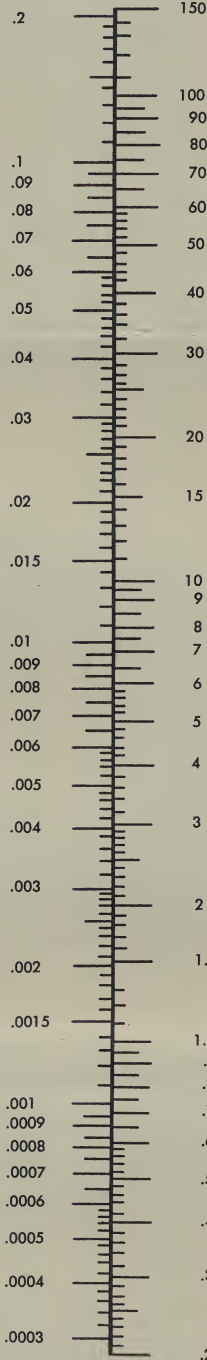
W = .00074 Nt

W = Watts Output

N = R.P.M.

t = Torque in  
ounce-inches

.2



OUTPUT - WATTS

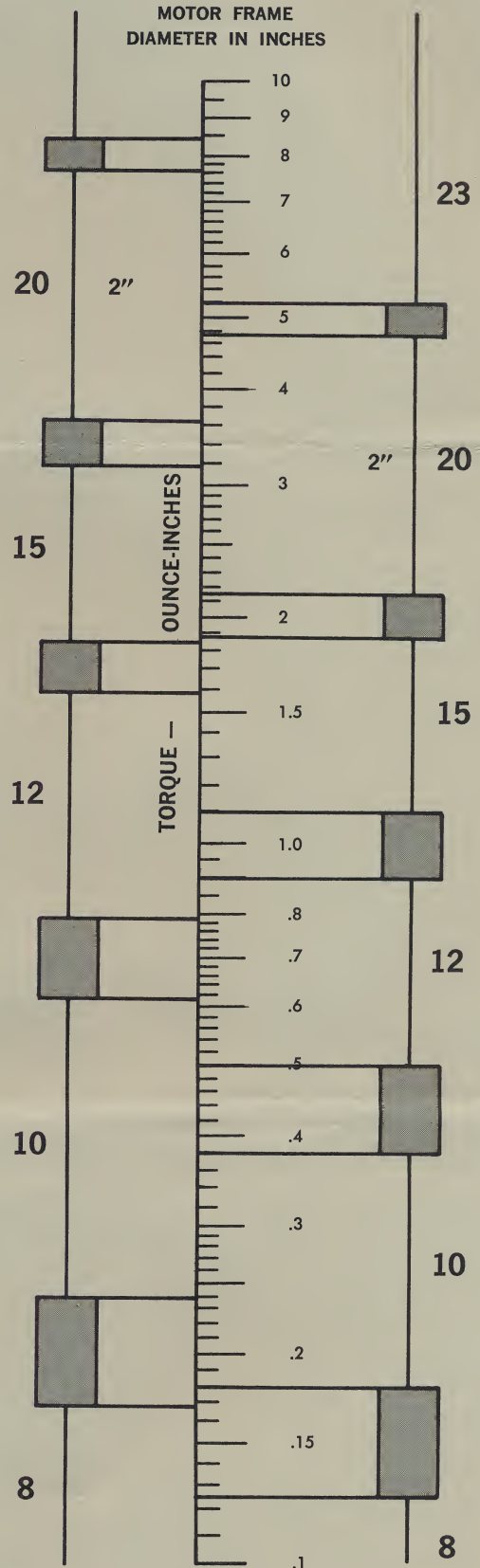
 **TRANSCO  
MOTOR**

## RECOMMENDED FRAME SIZES

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indicates that either of the ad-  
joining frames can be used, pref-  
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RECOMMENDED  
FRAME SIZES

RECOMMENDED  
FRAME SIZES







## PRODUCT DATA

TRANSCO MOTOR MANUFACTURING, INC., 221 WEST MAPLE AVENUE, MONROVIA, CALIF. 91016  
213/358-2536 TWX 213-571-3069

Please give as much information as possible so that Transco motor engineers can recommend the motor best suited to your application.

Company \_\_\_\_\_ Date \_\_\_\_\_  
Individual \_\_\_\_\_ Title \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_, State \_\_\_\_\_

### 1. Voltage:

Rated \_\_\_\_\_ volts ☐ A. C. ☐ D. C.  
Max. variation from \_\_\_\_\_ volts ☐ A. C. ☐ D. C.  
If A. C., Frequency \_\_\_\_\_ C.P.S. \_\_\_\_\_

### 2. Speed

No load \_\_\_\_\_ R. P. M.  
Rated load \_\_\_\_\_ R. P. M.  
Max. speed at Max. voltage \_\_\_\_\_ R. P. M.  
Min. speed at Min. voltage \_\_\_\_\_ R. P. M.

**NOTE:** Be sure to specify maximum variation at rated voltage.

### 3. Torque:

Rated \_\_\_\_\_ ounce inches  
Maximum \_\_\_\_\_ ounce inches

### 4. Describe any unusual characteristics or deviation from steady torque

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### 5. Duty Cycle:

Continuous \_\_\_\_\_  
Intermittant \_\_\_\_\_  
Time on \_\_\_\_\_ minutes \_\_\_\_\_ seconds  
Time off \_\_\_\_\_ minutes \_\_\_\_\_ seconds

### 6. Life Requirements:

Continuous duty \_\_\_\_\_ hours \_\_\_\_\_  
Intermittant duty \_\_\_\_\_ cycles \_\_\_\_\_

### 7. Rotation:

Clockwise \_\_\_\_\_ Counter-clockwise \_\_\_\_\_ Reversible \_\_\_\_\_

### 8. Operating temperature from \_\_\_\_\_ to \_\_\_\_\_ degrees F.

9. Lead Length \_\_\_\_\_ inches. \_\_\_\_\_  
If D. C., shielded leads required Yes \_\_\_\_\_ No \_\_\_\_\_

### 10. List military specifications covering assembly on special environmental requirements that must be met

\_\_\_\_\_  
\_\_\_\_\_

### 11. List any other special requirements which must be met such as rapid reversing, current limitations, radio noise limitations, shaft extensions details, etc.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

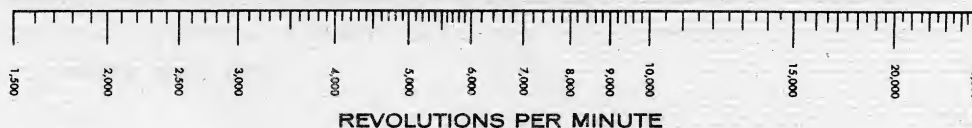
### 12. For what purpose is motor to be used (fan, drive motor, etc.)?

\_\_\_\_\_

### 13. Unit selected from catalogue most closely approximating your requirements.

\_\_\_\_\_  
\_\_\_\_\_





FOR APPROXIMATE MOTOR SIZE:

$D^2L = \frac{\text{TORQUE OZ. IN.}}{3}$

3

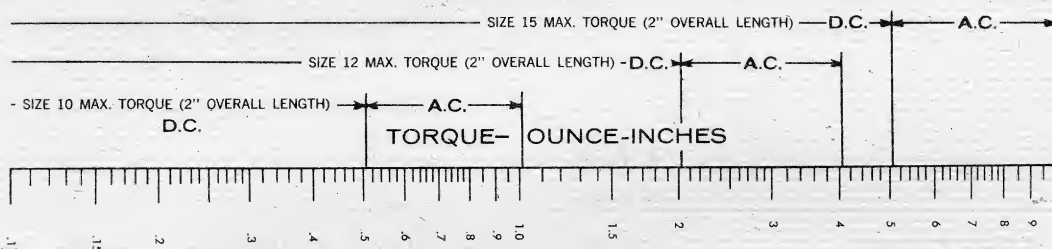
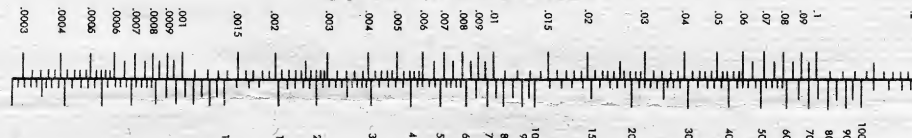
D = MOTOR DIAMETER IN.

L = \*LENGTH OF MOTOR IRON IN.

\*TOTAL MOTOR LENGTH EXCEEDS IRON BY THE END TURNS, BEARINGS, END PLATES AND COMMUTATOR ON D.C. MOTORS

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OUTPUT-HORSEPOWER



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